

REMARKS/ARGUMENTS

Claim 1 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Momose in view of Hebert; claims 2, 4-6 and 8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Momose and Hebert in view of Kabir; claims 3 and 7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Momose, Hebert, and Kabir as applied to claims 1 and 5, and further in view of Prior Art Figure 1.

Claim 1 of the instant invention comprises the limitations of a buried collector layer; a counterdoped collector region adjacent to said buried collector layer, and a base region adjacent to the counterdoped collector region. As acknowledged by the examiner the Momose patent does not describe a counterdoped collector region adjacent to the base region. The Herbert et al. patent teaches a self aligned implantation process to form the intrinsic base region 40. During this implantation of p-type dopants, the region above the N+ sinker region 12 is left open and the p-type dopants are allowed to enter the N+ sinker region 12. The N+ sinker region 12 is equivalent to the N+ buried region 20 in the instant disclosure. The Herbert et al. patent therefore teaches that p-type dopants can be implanted into the equivalent of the N+ buried region without affecting the performance of the transistor. Claim 1 of the instant invention requires a counterdoped collector region 70 adjacent to a buried layer 20 and adjacent to the base region 40. Clearly this is not taught in the Herbert et al. patent. In addition there is no teaching that would lead one the structure of claim 1 of the instant invention. The Herbert et al. patent teaches an inadvertent implantation of p-type dopant into an N+ sinker region 12 and not into the collector region 11 adjacent to the base region 40. The implantation is a by-product of the structure during the implantation process only. There is no suggestion to combine the patents to provide a device that has applicability in high frequency communication circuits. The section of the Herbert et al. patent to which the examiner refers states, “[B]y using this method, any base implant in the collector region will be counter doped by the highly doped collector N+ sinker 12, which was formed earlier.” The counter doping that takes place in the Herbert et al.

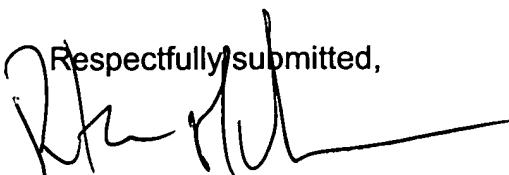
patent takes place in the highly doped collector N+ sinker 12 where it is deemed to have no effect on the collector. This does not represent a suggestion to combine as required by 35 U.S.C. 103(a). Claim 1 is therefore allowable under 35 U.S.C. 103(a) over the Momose patent in view of the Herbert et al. patent.

Claim 5 comprises all the limitations of claim 1. The Kabir et al. patent does not teach or describe a counterdoped collector region adjacent to the base region. Claim 5 is therefore clearly allowable over the Momose patent in view of the Herbert et al. patent and the Kabir et al. patent. Claims 2-4 and 6-9 all contain the limitation of a counterdoped collector region and are therefore also allowable over the Momose, Kabir et al., and the Herbert et al. patents.

In light of the above, it is respectfully submitted that the present application is in condition for allowance, and notice to that effect is respectfully requested.

While it is believed that the instant amendment places the application in condition for allowance, should the Examiner have any further comments or suggestions, it is respectfully requested that the Examiner contact the undersigned in order to expeditiously resolve any outstanding issues.

To the extent necessary, Applicants petition for an Extension of Time under 37 CFR 1.136. Please charge any fees in connection with the filing of this paper, including extension of time fees, to the deposit account of Texas Instruments Incorporated, Account No. 20-0668.

Respectfully submitted,

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